

STATEMENT OF BASIS

Acme Brick Tile & Stone, Inc. – Birmingham Plant
Leeds, Alabama
St. Clair County
410-0035

This proposed Title V Major Source Operating Permit (MSOP) renewal is issued under the provisions of ADEM Admin. Code R. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Jenkins Brick Company-Birmingham Plant was issued its MSOP on July 19, 2010 with an expiration date of July 18, 2015. Jenkins Brick Company-Birmingham Plant was acquired by Acme Brick Tile & Stone, Inc. – Birmingham Plant. Per ADEM Rule 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more than eighteen (18) months, before the date of expiration of the permit. The initial renewal application was received on January 8, 2015.

The following are the significant sources of air pollutants at this facility:

- Raw Material Handling and Processing
- Forming, Coating, Cutting, and Stacking
- Drying and Finishing, Packaging and Shipping

The facility reported a total GHGs of 7235.2 TPY. This is an estimate of the actual emissions for the calendar year of 2014.

Shale Raw Material Handling and Processing

The Shale Raw Material Handling and Processing operations consist of the following sources: Primary Crusher (C-1), Secondary Crusher (SC-1), and Screening (S-1). Particulate emissions generated from these sources are controlled by a common baghouse (BH-1).

Description

Shale is mined in the vicinity of the plant and hauled by truck to the grinding plant. Shale is conveyed to the building via a covered conveyor system comprised of three apron feeders each with two conveyor drop points. The shale approaches the building on the main enclosed conveyor and is dropped onto two other conveyors. Once in the building, the shale is transferred to the primary crusher (C-1). Crushed material then goes through the screening process (S-1).

Shale enters one of the seven screens (S-1) from the primary and secondary shale crushers (C-1 and SC-1). Undersized material goes to the ground shale storage bunkers and the oversized material is transferred to the secondary shale crushers (SC-1) for reprocessing. The material then goes through the screening process again until it is the right size to be stored in the bunkers for further processing.

Emission Standards

Opacity:

- Visible Emissions from Baghouse (BH-1) shall not exceed opacity of 7%, as determined by EPA Reference Method 9 of 40 CFR 60, Appendix A. (40 CFR Part 60, Subpart OOO)
- Fugitive emissions from Primary Crusher (C-1), Secondary Crusher (SC-1) and Screening (S-1) shall not exhibit greater than 10% opacity (as determined using EPA Reference Method 9 of 40 CFR 60, Appendix A) or the building enclosing the units shall not exhibit any visible fugitive emissions except emissions from a vent (as determined by EPA Reference Method 22 of 40 CFR 60, Appendix A). (40 CFR Part 60, Subpart OOO)
- Vent emissions from a building enclosing NSPS Subpart OOO affected units shall exhibit no greater than 7% opacity (as determined by EPA Reference Method 9 of 40 CFR 60, Appendix A). (40 CFR Part 60, Subpart OOO)

Particulate Matter:

- The particulate emission rate from Baghouse (BH-1) shall not exceed the lesser of 0.127 lb/hr (0.05 grams per dry standard cubic meter) or the allowable set by rule 335-3-4-.04. The limit of 0.127 lb/hr was requested by the facility to avoid PSD.

ADEM Admin. Code r. 335-3-4-.04(1) & ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

No person shall cause or permit the emission of particulate matter in any one hour from any source in a Class 1 County in excess of the amount given by the following equation for values up to 60,000 lbs/hr:

$$E=3.59(P)^{0.62} \text{ (P < 30 tons/hr)}$$

Values equal to or in excess of 60,000 lbs/hr shall be accomplished by use of the follow equation:

$$E=17.31(P)^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

Where:

E=Emissions in lb/hr

P=Process weight in tons/hour

- The Shale Primary Crusher (C-1), Shale Secondary Crusher (SC-1), and Shale Screening (S-1) hours of operation shall not exceed 3900 hours in any consecutive 12 month period.

ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

Expected Emissions

- Expected emissions from this unit are based on stack test performed on July 06, 2012.

Source #	Pollutant	Emission Rate(lb/hr)
BH-1	PM	0.064

Periodic Monitoring

Opacity and Particulate Matter:

- Each source permitted under this process shall be observed on a weekly basis for instantaneous visible emissions greater than 10%. Whenever observed visible emissions are greater than 10%, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two hours, followed by an additional observation to confirm the emissions are reduced to normal.

ADEM Admin. Code r. 335-3-16-.05

- Properly maintained and operated devices shall be utilized to measure the pressure differential between the inlets and exhausts of the baghouse to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differentials shall be checked on at least on a weekly basis. Whenever a pressure differential is outside of the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

ADEM Admin. Code r. 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, to include visible observations based on Method 9 to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of five years. (Admin. Code r. 335-3-16-.05)
- Records of monthly and rolling 12-month hours of operation shall be maintained in a form suitable for inspection for a period of at least five years following the date of the generation of records. (Admin. Code r. 335-3-16-.05)

These sources are **not** subject to CAM since they do not have pre-controlled potential emissions of greater than 100 TPY.

Forming, Coating, Cutting and Stacking

The Clay Body Preparation operations consist of sources: Reclaimer (R-1), Sand and Coloring Mixing (M-2), and Sand Coating and Texturing (C-2). Emissions of PM are generated from these sources.

Emissions from Reclaimer (R-1) are not controlled by a control device. Emissions from Sand and Coloring Mixing (M-2) are controlled by Baghouse (BH-2) and emissions from the Sand Coating and Texturing (C-2) are controlled by Baghouse (BH-3). The emissions from Reclaimer (R-1) are vented into the building.

Description

The Reclaimer (R-1) operates similarly to a bucket elevator and moves ground material from the ground storage bunker to a conveyor that loads into feeders for the pug mill. The reclaimer operation depends on the operation of the pug mill.

Various coloring and texturizing materials are mixed according to the brick being produced. The coloring materials include feldspars, nepheline syenite, iron oxide, kaolin, rutile, and fire clay. Sand is used to transport additives and to impart texture. The coating is applied to the column as it leaves the pug mill where it is mixed with sand and loaded under a baghouse controlled hood (BH-3).

The coating that does not adhere to the brick falls onto a conveyor or captured by a dust collector (BH-3) to be recycled through the process. From there, the coated column of brick is conveyed to the brick auto setter where it is cut into individual bricks and stacked onto kiln cars.

Emission Standards

Opacity:

- Vent emissions from the building enclosing the Reclaimer (R-1), the Sand and Coloring Mixing (M-2) and the Sand Coating Texturing (C-2) shall exhibit no greater than 7% opacity as determined by EPA Method 9 of 40 CFR 60, Appendix A.

40 CFR 60.672 Subpart OOO

- Visible emissions from Baghouse (BH-2) and Baghouse (BH-3) shall not exceed an opacity of 7%, as determined by EPA Reference Method 9 of 40 CFR 60, Appendix A.

40 CFR 60.672 Subpart OOO

Particulate Matter:

- The particulate emission rate from the Reclaimer (R-1) shall not exceed the lesser of 0.35lbs/hr or the allowable set by rule 335-3-4-.04. The limit of 0.35 lb/hr was requested by the facility to avoid PSD.

ADEM Admin. Code r. 335-3-4-.04(1) & ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

- The particulate emission rate from the Sand and Coloring Mixing (M-2) unit shall not exceed the lesser of 0.21 lbs/hr (0.05 grams per dry standard cubic meter) or the allowable set by rule 335-3-4-.04. The limit of 0.21 lb/hr was requested by the facility to avoid PSD.

ADEM Admin. Code r. 335-3-4-.04(1) & ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

- The particulate emission rate from the Sand and Coloring Texturing (C-2) unit shall not exceed the lesser of 2.01 lb/hr or the allowable set by rule 335-3-4-.04. The limit of 2.01 lb/hr was requested by the facility to avoid PSD.

ADEM Admin. Code r. 335-3-4-.04(1) & ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

- The Reclaimer (R-1), Sand Coloring and Mixing (M-2), and Sand and Coating Texturing (C-2) hours of operation shall not exceed 6552 hours in any consecutive 12 month period. The hours of operation limit was requested by the facility to avoid PSD.

ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

ADEM Admin. Code r. 335-3-4-.04(1):

$$E=3.59(P)^{0.62} \quad (P < 30 \text{ tons/hr})$$

$$E=17.31(P)^{0.16} \quad (P \geq 30 \text{ tons/hr})$$

Where:

E=Emissions in lb/hr

P=Process weight in tons/hour

Expected Emissions

- Expected emissions from Reclaimer (R-1) are based on AP-42 emission factors.
- Expected emissions from units Coloring and Mixing (M-2), and Sand and Coating Texturing (C-2) are based on the amount of coating used and the quantity of filtered coatings recovered from baghouse filters.

Expected emissions from these units are as follows:

Source #	Pollutant	Emission Rate
R-1	PM	0.16 lb/hr
M-2	PM	0.06 lb/hr
C-2	PM	0.02 lb/hr

Periodic Monitoring

Opacity and Particulate Matter

- Each source permitted under this process shall be observed on a weekly basis for any visible emissions. Whenever any visible emissions are observed, maintenance inspections and/or corrective action to reduce the visible emissions are to be initiated within two hours, followed by an additional observation to confirm the emissions are reduced to normal.

ADEM Admin. Code r. 335-3-16-.05

- Properly maintained and operated devices shall be utilized to measure the pressure differential between the inlets and exhausts of the baghouse to determine if the pressure differential is within the manufacturer's recommended operating range. The pressure differentials shall be checked on at least a weekly basis. Whenever a pressure differential is outside of the manufacturer's recommended range, maintenance inspections and/or corrective action to bring the pressure differential within the manufacturer's recommended range are to be initiated within two hours.

ADEM Admin. Code r. 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, to include visible observations and Method 9 observations performed to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.

ADEM Admin. Code r. 335-3-16-3.05

- Records of monthly and rolling 12-month hours of operation shall be maintained in a form suitable for inspection for a period of at least five years following the date of the generation of records.

ADEM Admin. Code r. 335-3-16-3.05

These sources are **not** subject to CAM since they do not have pre-controlled potential emissions of greater than 100 TPY.

Brick Dryers

The Brick Drying operation consists of one Brick Dryers (D-1). Emissions of PM, VOCs, CO and NOX are generated from this source. No control device is used to control emissions from this source. The emissions are vented into the building.

Description

Bricks enter the dryer from the auto setter. The bricks are heated gradually to about 375 degrees Fahrenheit to remove excess water. The heat used in the dryer is recycled heat recovered from the cooling zone of the kiln. The dried brick enters the kiln.

Emission Standards

Opacity:

- This source shall not discharge more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall any source discharge a 6-minute average opacity of particulate emissions greater than 40%. Opacity will be determined by 40 CFR Part 60, Appendix A, Method 9, unless otherwise specified in the Unit Specific provisos of this permit.

ADEM Admin. Code 335-3-4-.01

Particulate Matter:

- Particulate matter emissions from each source permitted under this unit shall not exceed the emissions limitations found in ADEM Admin. Code r. 335-3-4-.04.

$$E=3.59(P)^{0.62} \quad (P < 30 \text{ tons/hr})$$

$$E=17.31(P)^{0.16} \quad (P \geq 30 \text{ tons/hr})$$

Where:

E=Emissions in lb/hr

P=Process weight in tons/hour

(ADEM Admin. Code r. 335-3-4-.04)

Expected Emissions

Expected emissions from this unit are based on AP-42 calculations:

Source #	Pollutant	Emission Rate
D-1	PM	5.60 lbs/hr
	VOC	0.90 lbs/hr
	CO	9.3 lbs/hr
	NOX	2.94 lbs/hr

Periodic Monitoring

Opacity and Particulate Matter:

- The Permittee shall perform a visual check, at least once per week. These checks shall be performed by a person familiar with Method 9. If any visible emissions are noted, and not corrected within a period of one (1) hour, then a Method 9 must be performed within 4 hours of the initial observation. Maintenance shall be performed as needed. Any repairs of observed problems shall be recorded.

ADEM Admin. Code r. 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, to include visible observations based on Method 9 to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.

This source is **not** subject to CAM since it does not have pre-controlled potential emissions of greater than 100 TPY.

Tunnel Kiln

The Tunnel Kiln operation consists of one Tunnel Kiln, TK-1 Emissions of PM, SO₂, NO_x, CO, VOC, HCl, & HF are generated from this source. Emissions from the tunnel kiln are controlled by a Dry Lime Injection with Fabric Filter (DIFF-1).

Description

Bricks enter the kiln from the brick dryer (D-1), then the bricks are heated to approximately 2000 degree Fahrenheit in the firing zone. Before leaving the firing zone, the bricks enter the flashing zone where excess fuel is added to the kiln to create a reducing atmosphere that imparts color to the bricks. After flashing, the bricks enter the cooling zone. The heat from the cooling zone is captured and redirected to the brick dryer. Then cooled bricks are unloaded from the kiln cars and packaged before being stored or shipped.

Emission Standards

Particulate Matter:

- The particulate emission rate from Tunnel Kiln (TK-1) shall not exceed the lesser of 1.63 lb/hr or the allowable set by rule 335-3-4-.04. The limit of 1.63 lb/hr was requested by the facility to avoid PSD.

ADEM Admin. Code r. 335-3-4-.04(1) & ADEM Admin. Code r. 335-3-14-.04(Anti-PSD)

$$E=3.59(P)^{0.62} \text{ (P < 30 tons/hr)}$$

$$E=17.31(P)^{0.16} \text{ (P ≥ 30 tons/hr)}$$

Where:

E=Emissions in lb/hr

P=Process weight in tons/hour

(ADEM Admin. Code R 335-3-4-.04)

HF and HCl:

- HAP emissions would be limited to less than 10 TPY for individual HAPs and less than 25 TPY for combined HAPs. However, the facility has requested a limitation of 9 TPY for individual HAPS and 23.5 TPY for combined HAPs.

ADEM Admin. Code r. 335-3-14-.06(Anti-112(g))

Expected Emissions

These expected emissions from this unit are based on AP-42 calculations:

Source #	Pollutant	Scenario		
		Natural Gas	L.P. Gas	Fuel Oil
TK-1	PM	0.67 lbs/hr	0.62 lbs/hr	1.17 lbs/hr
	SO ₂	20.1 lbs/hr	20.9 lbs/hr	46.5 lbs/hr
	NO _x	10.5 lbs/hr	15.9 lbs/hr	12.8 lbs/hr
	CO	36.0 lbs/hr	33.4 lbs/hr	33.5 lbs/hr
	VOC	0.72 lbs/hr	0.72 lbs/hr	0.56 lbs/hr
	HCl	0.76 lbs/hr	0.76 lbs/hr	0.76 lbs/hr
	HF	1.11 lbs/hr	1.11 lbs/hr	1.11 lbs/hr

Periodic Monitoring

Opacity and Particulate Matter:

- The Permittee shall perform a visual check, at least once per week. These checks shall be performed by a person familiar with Method 9. If any visible emissions are noted, and not corrected within a period of one (1) hour, then a Method 9 must be performed within 4 hours of the initial observation. Maintenance shall be performed as needed. Any repairs of observed problems shall be recorded.

ADEM Admin. Code r. 335-3-16-.05

Recordkeeping and Reporting

- The facility shall maintain a record of all inspections, to include visible observations based on Method 9 to satisfy the requirements of periodic monitoring. This shall include all problems observed and corrective actions taken. Each record shall be maintained for a period of 5 years.

ADEM Admin. Code r. 335-3-16-.05

- Observations, corrective actions and maintenance records for the Dry Lime Injection Fabric Filter (DIFF-1) shall be maintained and available for inspection. Records shall be kept for at least 5 years from recording.

ADEM Admin. Code r. 335-3-16-.05

This source is **not** subject to CAM since it does not have pre-controlled potential emissions of greater than 100 TPY.

Based on the above analysis, I recommend that, pending the 30-day public comment period and the 45-day EPA review period, the renewal to the Major Source Operating Permit 410-0035 be issued to Acme Brick Tile & Stone, Inc. – Birmingham Plant. If the Title V conditions are adhered to by Acme Brick Tile & Stone, Inc. – Birmingham Plant, the facility should be in compliance with all applicable State and Federal Air Pollution regulations.



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March 27, 2015
Date